

Work Order ID 150915

Monday, September 12, 2016 10:27:55 AM

150915

Item ID: D119-796-241
 Revision ID:
 Item Name: AFT Crosstube Installation without Step (no hardware)
 Start Date: 8/25/2016 Start Qty: 1.00
 Required Date: 9/21/2016 Req'd Qty: 1.00
 Reference:

Approvals: Process Plan: **DAS** 21 Date: **SEP 12 2016** Tooling: SPC (Y/N):
 QC: 3-82 Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D119-796-241	1								

110 Document Control 0.00
 111N
 DC Memo 0.00
 Doc.Control -USB or Paperwork Photocopy bluefile and create labels as per PPP D119-796-241 chg 004

120
 120N
 Packaging Packaging 0.00
 Memo 0.00

130
 130N
 CNC Bend 2 BENDING MACHINE - CROSSTUBES 0.08
 CNC Alpha 160 Bender Memo 0.31
 Bend tube as per Dwg D119-796-241 using CNC bender program

16-10-17
 16-10-17

16-10-17
 16-10-17

ml
29 Jul 2019



DQA: _____ Date: _____
QA Closed: _____ Date: _____
Work Order update only ☐

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order: <u>150915</u>		AGAINST DEPARTMENT/PROCESS	
Part No. <u>D119-796-241</u>		Cross tube ☐ Water Jet ☐	
NCR No. <u>19-7354</u>		Small Fab ☐ Prod. Eng. Coord. ☐	
Date: <u>17/9/22</u>		Finishing ☐ Rec/Store/Packaging ☐	
Step #: <u>130</u>		Composite ☐ Supplier ☐	
Disposition		Engineering ☐	
Description Work Order Deviation		Quality ☐	
Tube has excessive twist. Wrong		Other ☐	
Buggy used during bending		MRB (QS1042) Approval <u>190716</u>	
Completed By <u>TW</u>		<u>99708</u>	
Lead hand / Supervisor <u>TW</u>		QC / QA Coordinator <u>17-02-16</u>	
Approval Verification <u>TW</u>		DAS Approval <u>68</u>	
9-89 <u>9/89</u>		9-89 <u>9/89</u>	
Root Cause		FAULT CATEGORY	
Environment ☐		Positioned Wrong ☐	
Design ☐		Outside Dimensions ☐	
Doc/Data ☐		Over/Under tolerance ☐	
Equip/Tooling ☐		Part Incorrect ☐	
Handling/Pre ☐		Part Lost/Missing ☐	
Material ☐		Part Moved ☐	
Internal Transport ☐		Drawing ☐	
Tribal Knowledge ☐		Finish ☐	
LOA ☐		Misread ☐	
Substation ☐		Turning Sequence ☐	
Past Expiry Date ☐		Power Loss/Surge ☐	
Misidentified ☐		Folio/Program ☐	
No Re-verification ☐		Grain ☐	
Operator ☒		Weld ☐	
Offset/Setup ☐		Wrong Stock Pulled ☐	
Supplier ☐		Out of Sequence ☐	
Training ☐		Off-set ☐	
Use for Testing ☐		Mislabeled ☐	
Poor Information ☐		Fit/Function ☐	
Rushing ☐		Misaligned/off center ☐	
Product Improvement ☐		Temperature/Cure ☐	
Process Improvement ☐		Set-up ☐	
Manufacturing Process ☐		BOM/Route ☐	
Past Due ☐		Broken/Damage/Defect ☐	
OTHER: ☐		Inspection Incomplete/Unqualified ☐	
		Contamination ☐	
		Countersink ☐	
		Cut Too Short ☐	
		Instructions Incomplete/Unclear ☐	
		Drill Holes ☐	

WorkOrder ID 150915

Monday, September 12, 2016 10:27:55 AM

150915

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

N.S1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop

N.S2

Start Date: 8/25/2016

Start Qty: 1.00

1

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	QC15- Crosstube Dimensional Check	0.00							
140									
OC									
Quality Control									

Memo

0.00

OCT 17 2016

38

DAS

145

145

Crosstubes

Crosstubes

Memo

0.14

1- CUT TUBE AT HEIGHT ON FAL SHEET

2- VERIFY HEIGHT:

24.970

BY QC15 LEVEL INSPECTOR

3- DEBURR CUT SURFACE

DR2 16-16-19



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATEWork Order update only ☐

QA Closed: _____

Date: _____

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS						MRB (QS1042) Approval			
Part No. _____		Rework Scrap Use-as-is		Suspected Unapproved		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other	
NCR No. _____		Step #: _____		QTY Effective : _____									
Date : _____													
Description Work Order Deviation		Disposition											
Root Cause													
Environment	No Re-verification	Operator	Offset/Setup	Supplier	Training	Use for Testing	Poor Information	Rushing	Product Improvement	Process Improvement	Manufacturing Process	Past Expiry Date	Misidentified
Design													
Doc/Data													
Equip/Tooling													
Handling/Pre													
Material													
Internal Transport													
Tribal Knowledge													
LOA													
Substation													
OTHER : _____													
FAULT CATEGORY													
Pressure/Forced				Temperature/Cure				Power Loss/Surge				Positioned Wrong	
Bending				Set-up				Folio/Program				Outside Dimensions	
Centre Not Concentric				BOM/Route				Grain				Over/Under tolerance	
Cracks				Broken/Damage/Defect				Weld				Part Incorrect	
Crimp/Kink/Ripple/Wave				Inspection Incomplete/Unqualified				Wrong Stock Pulled				Part Lost/Missing	
Cuffs				Contamination				Out of Sequence				Part Moved	
Crushing				Countersink				Off-set				Drawing	
Heat Treat				Cut Too Short				Mislabeled				Finish	
Wave/Twist in Tube				Instructions Incomplete/Unclear				Fit/Function				Misread	
Marks/Chatter				Drill Holes				Misaligned/off center				Turning Sequence	

Work Order ID 150915

Monday, September 12, 2016 10:27:55 AM

150915

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop

NS2

Start Date: 8/25/2016

Start Qty: 1.00

1

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

150

Crosstubes

Memo

0.12

***** ENSURE PROPER JIG POSITIONING *****

1-DRILL TUBE AS PER DWG USING DT10087

2- DRILL RIVET HOLES USING DT8787 FWD

3- DEBURR AND CSINK RIVET HOLES AS PER DWG

4- FLIP TUBE, REPEAT STEP 2 AND 3

5- SCRIBE PART# AND BATCH# USING VIBRATING STYLUS ON INSIDE
OF CUFF AS PER DWG D119-796-141

082 16-10-19



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

QA Closed: _____ Date: _____

DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Work Order: _____	Suspected Unapproved	Rework	Skid-tube	Cross tube	Water Jet
Part No. _____		Scrap	Machining	Small Fab	Prod. Eng. Coord.
NCR No. _____		Use-as-is	Thermoforming	Finishing	Rec/Store/Packaging
Date: _____	Step #: _____	QTY Effective : _____			
Description Work Order Deviation		Disposition			
MRB (QS1042) Approval		Completed By			
Lead hand / Supervisor Approval Verification		QC / QA Coordinator Approval			
Root Cause		FAULT CATEGORY			
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence
Past Expiry Date	Manufacturing Process	OTHER : _____			
Misidentified	Past Due				

Work Order ID 150915

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Item ID:	D119-796-241	Accept	*N900040100*	Setup	Start	*NS1*
Revision ID:						
Item Name:	AFT Crosstube Installation without Step (no hardware)			Stop		*NS2*
Start Date:	8/25/2016	Start Qty:	1.00			
Required Date:	9/21/2016	Req'd Qty:	1.00			
Reference:				Cust Item ID:		
				Customer:		

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:	Stop		*NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

HandFXtube

Hand Finishing Cross tubes

Memo

0.07

1- INSPECT AND REMOVE ALL MARKS FROM TUBE WITHIN LIMITS
ON DWG D119-796-141

IMMEDIATELY AFTER GRINDING

2- PRESSURE WASH X-TUBE INSIDE AND OUT

3- ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT AS PER OSI005.

4- Verify grinding marks

By: 47

DAS

QC7-Inspect Chemical Conversion Coat

0.00

Memo

0.00

QC

170

170

Quality Control

DP2 16-10-20

1 47

16-10-20

DA
47
9-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only

QA Closed: _____ Date: _____

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS						Engineering																																																																																																													
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Work Order ID 150915

Monday, September 12, 2016 10:27:55 AM

150915

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop

NS2

Start Date: 8/25/2016

Start Qty: 1.00

1

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Reference:

Cust Item ID:
Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

Outsource2

Memo

0.00

Outsource process - NDT

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Liquid Penetrant Inspection as per OSI 0380R
Issue P/O: 34018 LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

190

190

Packaging

Packaging

0.00

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

200

200

QC

QC5- Inspect part completeness to step on W/O

0.00

Quality Control

Memo

0.00

*** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE***

Inspect for damage & ensure results are as per Dwg D119-796-241

OCT 21 2016

DAS
13
9-89

OCT 21 2016

DAS
13
9-89

OCT 21 2016

DAS
9
9-89

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____ Part No.: _____ NCR No.: _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Machining ☐ Small Fab ☐ Prod. Eng. Coord. ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Large Fab ☐ Composite ☐ Supplier ☐				Engineering Quality ☐ Other ☐	
Date: _____ Step #: _____		QTY Effective: _____		MRB (QSI042) Approval				Completed By	
Description Work Order Deviation		Disposition							
FAULT CATEGORY									
Root Cause Environment ☐ No Re-verification ☐ Design ☐ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐		Pressure/Forced Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		Temperature/Cure Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER: _____									

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Setup Start

Item Name: AFT Crosstube Installation without Step (no hardware)

NS1

Start Date: 8/25/2016

1

Stop

NS2

Required Date: 9/21/2016

1

Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

NR1
NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept Qty Reject Qty

Reject Number Insp.
Stamp

0.00

230

SprayPaint

SprayPaint

Memo

0.05

***VERIFY BY MAA BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

MASK SCRIBE B# & P# AND VERIFY

1- Prime Inside of tube.

2- Install nut plates as per dwg (D2873-043)

3- Mask cuffs per note#2.

4- Prime exterior of tube per QSI005.

Primer Batch: 135654

Start Time: 11h00

Finish Time: 12h00

24-10-16

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order update only

AGAINST DEPARTMENT/PROCESS

DISPOSITION

Work Order: _____
 Part No. _____
 NCR No. _____

Skid-tube _____
 Machining _____
 Thermoforming _____
 Large Fab _____

Cross tube _____
 Small Fab _____
 Finishing _____
 Composite _____

Water Jet _____
 Prod. Eng. Coord. _____
 Rec/Store/Packaging _____
 Supplier _____

QTY Effective :

MRB (QSI042) Approval

Date : _____ Step #: _____

Disposition

Description Work Order Deviation

Completed By

Lead hand / Supervisor
 Approval Verification

QC / QA Coordinator
 Approval

FAULT CATEGORY

Root Cause				FAULT CATEGORY											
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong										
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions										
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance										
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect										
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing										
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved										
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing										
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish										
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread										
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence										
Past Expiry Date	Manufacturing Process														
Misidentified	Past Due														

OTHER :

Work Order ID 150915

150915

Monday, September 12, 2016 10:27:55 AM

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop

NS2

Start Date: 8/25/2016

Start Qty: 1.00

1

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Reference:

Cust Item ID:
Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/

Work Center ID

Operation Description

Set Up/Run Hours

Tool ID Tool # Plan Code

Accept Qty

Reject Qty

Reject Number

Insp. Stamp

240

QC14- Inspect Spray Paint

0.00

240

QC

Memo

0.00

Quality Control

16-10-25

***VERIFY BY 150915 BATCH # TO MATCH W/O
***VERIFY BY 41 PART # TO MATCH
W/O 150915



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATEWork Order update only ☐

QA Closed: _____ Date: _____

DISPOSITION		AGAINST DEPARTMENT/PROCESS				
Work Order: _____	Suspected Unapproved	Rework	Skid-tube	Cross tube	Water Jet	Engineering
Part No. _____		Scrap	Machining	Small Fab	Prod. Eng. Coord.	Quality
NCR No. _____		Use-as-is	Thermoforming	Finishing	Rec/Store/Packaging	Other
Date: _____	Step #: _____	QTY Effective : _____				MIRB (QS1042) Approval
Description Work Order Deviation		Disposition				Completed By
						Lead hand / Supervisor Approval Verification
						QC / QA Coordinator Approval

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER :									

150915

Page 8

Accept

N90040100

NSI

Stop

NS

—

*
*
*

Cust Item ID:
Customer:

Start

Stop

NR1

Insp.
Stamp

0.26

Assemble as per dwg D119-796-241 and OSI

1- Abrade mating surfaces with Scotch Brite 7447 and clean with Dupont 4105s or equivalent as per dwg.

2- Install D5152-043 with proséal 890 on concave surface, 0.100" MIN thick as per dwg using DTT0112 (identified righ and left)

***** MAINTAIN CLAMPING PRESSURE ON FOR MIN 72HRS*****

EXP:

Start:

Finish:

3- Install center support without bonding.

4- Install Damper support and contact pads using proseal 890 per dwg and clamp in position.

EXP.

Start:

Finish:

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____		AGAINST DEPARTMENT/PROCESS		Engineering	
Part No. _____		Water Jet		Quality	
NCR No. _____		Prod. Eng. Coord.		Other	
Date: _____		Rec/Store/Packaging		Supplier	
Step #: _____		QTY Effective: _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
Root Cause		Fault Category		Lead hand / Supervisor Approval Verification	
QC / QA Coordinator Approval		Positioned Wrong		Outside Dimensions	
Over/Under tolerance		Part Incorrect		Part Lost/Missing	
Part Moved		Drawing		Finish	
Misread		Turning Sequence			
Power Loss/Surge		Folio/Program		Grain	
Weld		Wrong Stock Pulled		Out of Sequence	
Off-set		Mislabeled		Fit/Function	
Misaligned/off center					
Temperature/Cure		Set-up		BOM/Route	
Broken/Damage/Defect		Inspection Incomplete/Unqualified		Contamination	
Countersink		Cut Too Short		Instructions Incomplete/Unclear	
Drill Holes					
Pressure/Forced		Bending		Centre Not Concentric	
Cracks		Crimp/Kink/Ripple/Wave		Cuffs	
Crushing		Heat Treat		Wave/Twist in Tube	
Marks/Chatter					
OTHER: _____					
Root Cause		No Re-verification		Operator	
Offset/Setup		Supplier		Training	
Use for Testing		Poor Information		Rushing	
Product Improvement		Process Improvement		Manufacturing Process	
Past Due					
Environment		Design		Doc/Data	
Equip/Tooling		Handling/Pre		Material	
Internal Transport		Tribal Knowledge		LOA	
Substation		Past Expiry Date		Misidentified	

Work Order ID 150915

Monday, September 12, 2016 10:27:55 AM

150915

Item ID: D119-796-241

Accept

Revision ID:

Item Name: AFT Crosscube Installation without Step (no hardware)

Start Date: 8/25/2016

Start Qty: 1.00

1

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Reference:

Cust Item ID:
Customer:

N900040100

Setup Start

NS1

Stop

NS2

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

244

QC5- Inspect part completeness to step on W/O

0.00

244
QC

Memo

0.00

Quality Control

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; text-align: center;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐		MIRB (QS1042) Approval	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																						
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																						
Large Fab ☐	Composite ☐	Supplier ☐																							
Date: _____ Step #: _____		QTY Effective : _____		Disposition																					
Description Work Order Deviation						Completed By																			
						Lead hand / Supervisor Approval Verification																			
						QC / QA Coordinator Approval																			

Root Cause		FAULT CATEGORY									
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐						
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐						
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐						
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐						
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐						
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐						
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐						
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐						
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐						
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐						
Past Expiry Date ☐	Manufacturing Process ☐										
Misidentified ☐	Past Due ☐										
		OTHER : _____									

Work Order ID 150915

Monday, September 12, 2016 10:27:55 AM

150915

Item ID: D119-796-241

Accept

Revision ID:

Item Name: AFT Crossstube Installation without Step (no hardware)

N900040100

Setup Start

NS1

Start Date: 8/25/2016

Start Qty: 1.00

1

Stop ***NS2***

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

QC:

Date:

SPC (Y/N):

Date:

Stop

NR1
NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

246

Spray Painting per OSI005 4.2

0.00

246

Spray Paint

Memo

0.07

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

MASK SCRIBE B# & P# AND VERIFY

1- Remove all non-fixed hardware and clean any excess prosoal.

2- Scuff tube with Scotch Brite 7447.

3- Mask cuff per note#2.

4- Prime as per dwg and OSI005

Primer Batch: _____

Start Time: _____

Finish Time: _____

5- Apply matte clear as per dwg and OSI005

Clear Batch: _____

Start Time: _____

Finish Time: _____

Work Order ID 150915

150915

Monday, September 12, 2016 10:27:55 AM

Item ID: D119-796-241

Accept

Revision ID:

N9000040100

Setup Start

NS1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop

NS2

Start Date: 8/25/2016

Start Qty: 1.00

1

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/

Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan
Code

Accept Qty

Reject Qty

Reject Number Insp.
Stamp

248

Spray Painting per OSK005 4.2

0.00

248

Spray Paint

Memo

0.10

Spray Painting

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH
W/O _____

MASK SCRIBE B# & P# AND VERIFY

1- Mask underside of tube as per dwg. Mask cuff per note#2.

2- Scuff tube with Scotch Brite 7447

3- Paint outside of crosstube

Paint Batch: _____

Start Time: _____

Finish Time: _____

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐

QA Closed: _____ Date: _____

Work Order: _____ Part No.: _____ NCR No.: _____ Date: _____		DISPOSITION Suspected Unapproved Rework Scrap Use-as-is Skid-tube Machining Thermoforming Large Fab Cross tube Small Fab Finishing Composite Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		AGAINST DEPARTMENT/PROCESS Engineering Quality Other Machining Thermoforming Large Fab		Disposition QTY Effective : _____	
Description Work Order Deviation		Disposition		MTRB (QS1042) Approval			
Completed By		Lead hand / Supervisor Approval Verification		QC / QA Coordinator Approval			

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/ Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center	Turning Sequence						
Past Expiry Date	Manufacturing Process	OTHER : _____									
Misidentified	Past Due										

Work Order ID 150915

Monday, September 12, 2016 10:27:56 AM

150915

Item ID: D119-796-241

Accept

Revision ID:

N900040100

Setup Start

NS1

Item Name: AFT Crosscube Installation without Step (no hardware)

Stop

NS2

Start Date: 8/25/2016

Start Qty: 1.00

1

Required Date: 9/21/2016

Req'd Qty: 1.00

1

Cust Item ID:
Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250

QC14-Inspect Spray Paint

0.00

Crosscubes

250

QC

Memo

0.00

Quality Control

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH

W/O _____

252

0.00

252

Crosscubes

Crosscubes

Memo

0.17

1- Re-install non fixed hardware per dwg

Torque clamps on damper and contact pad to 80-100 IN-LBS,

2- Apply a fillet-seal of proseal 890 around damper supports and contact pads.

Allow proseal to dry before inspecting.

Proseal 890

Batch: _____

EXP: _____

PROSEAL CURE TIME 72 HOURS:

Start: _____

Finish: _____



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Suspected Unapproved		Skid-tube Machining Thermoforming Large Fab	Cross tube Small Fab Finishing Composite	Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier	Engineering Quality Other
Step #:		QTY Effective :			
Description Work Order Deviation		Disposition			
Work Order: _____					
Part No. _____					
NCR No. _____					
Date: _____		MRR (QS1042) Approval			
		Completed By			
		Lead hand / Supervisor Approval Verification			
		QC / QA Coordinator Approval			

Root Cause		FAULT CATEGORY									
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong						
Design	Operator	Bending	Set-up	Folio/Program	Outside Dimensions						
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain	Over/Under tolerance						
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld	Part Incorrect						
Handling/Pre	Training	Crimp/Kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled	Part Lost/Missing						
Material	Use for Testing	Cuffs	Contamination	Out of Sequence	Part Moved						
Internal Transport	Poor Information	Crushing	Countersink	Off-set	Drawing						
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled	Finish						
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function	Misread						
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off-center	Turning Sequence						
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
OTHER :											

Work Order ID 150915

Monday, September 12, 2016 10:27:56 AM

150915

Page 13

Item ID: D119-796-241
Revision ID:

Accept

N900040100

Setup Start

NS1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop

NS2

Start Date: 8/25/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 9/21/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

260 OCS- Inspect part completeness to step on W/O 0.00

260

Memo

0.00

QC

RE-CHECK TORQUE ON CLAMP AFTER PROSEAL HAS CURED AS PER DWG.

1- ATTACH A RED TAG TO CENTER SUPPORT THAT READS

"CENTER SUPPORT NOT FIXED"

THEN DATE AND STAMP IT.

***VERIFY BY _____ BATCH # TO MATCH W/O

***VERIFY BY _____ PART # TO MATCH W/O _____

290

290

Packaging

0.00

Packaging

Memo

0.03

Packaging

Identify and pack for shipping as per PPP D119-796-241

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____
 QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐				MRB (QS1042) Approval ☐	
Date: _____ Step #: _____		QTY Effective: _____		Disposition				Completed By	
Description Work Order Deviation								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause		FAULT CATEGORY												
Environment	No Re-verification	Pressure/Forced	Temperature/Cure	Power Loss/Surge	Positioned Wrong	Outside Dimensions	Over/Under tolerance	Part Incorrect	Part Lost/Missing	Part Moved	Drawing	Finish	Miscread	Turning Sequence
Design	Operator	Bending	Set-up	Folio/Program										
Doc/Data	Offset/Setup	Centre Not Concentric	BOM/Route	Grain										
Equip/Tooling	Supplier	Cracks	Broken/Damage/Defect	Weld										
Handling/Pre	Training	Crimp/kink/Ripple/Wave	Inspection Incomplete/Unqualified	Wrong Stock Pulled										
Material	Use for Testing	Cuffs	Contamination	Out of Sequence										
Internal Transport	Poor Information	Crushing	Countersink	Off-set										
Tribal Knowledge	Rushing	Heat Treat	Cut Too Short	Mislabeled										
LOA	Product Improvement	Wave/Twist in Tube	Instructions Incomplete/Unclear	Fit/Function										
Substation	Process Improvement	Marks/Chatter	Drill Holes	Misaligned/off center										
Past Expiry Date	Manufacturing Process													
Misidentified	Past Due													
		OTHER: _____												

Work Order ID 150915

Monday, September 12, 2016 10:27:56 AM

150915

Item ID: D119-796-241

Accept

Revision ID:

N9000040100

Setup Start

NS1

Item Name: AFT Crosstube Installation without Step (no hardware)

Stop *NS2*

Start Date: 8/25/2016 Start Qty: 1.00

1

Required Date: 9/21/2016 Req'd Qty: 1.00

1

Cust Item ID:
Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

300

QC21- Final Inspection - Work Order Release

0.00

2000

Memo

0.02

Quality Control


SEP 23 2016

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only



Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐		Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐													
Date : _____		Step #: _____		QTY Effective : _____		MRB (QS1042) Approval																	
Description Work Order Deviation												Disposition											
Root Cause												FAULT CATEGORY											
Environment ☐				No Re-verification ☐				Pressure/Forced ☐				Temperature/Cure ☐				Power Loss/Surge ☐				Positioned Wrong ☐			
Design ☐				Operator ☐				Bending ☐				Set-up ☐				Folio/Program ☐				Outside Dimensions ☐			
Doc/Data ☐				Offset/Setup ☐				Centre Not Concentric ☐				BOM/Route ☐				Grain ☐				Over/Under tolerance ☐			
Equip/Tooling ☐				Supplier ☐				Cracks ☐				Broken/Damage/Defect ☐				Weld ☐				Part Incorrect ☐			
Handling/Pre ☐				Training ☐				Crimp/Kink/Ripple/Wave ☐				Inspection Incomplete/Unqualified ☐				Wrong Stock Pulled ☐				Part Lost/Missing ☐			
Material ☐				Use for Testing ☐				Cuffs ☐				Contamination ☐				Out of Sequence ☐				Part Moved ☐			
Internal Transport ☐				Poor Information ☐				Crushing ☐				Countersink ☐				Off-set ☐				Drawing ☐			
Tribal Knowledge ☐				Rushing ☐				Heat Treat ☐				Cut Too Short ☐				Mislabeled ☐				Finish ☐			
LOA ☐				Product Improvement ☐				Wave/Twist in Tube ☐				Instructions Incomplete/Unclear ☐				Fit/Function ☐				Misread ☐			
Substation ☐				Process Improvement ☐				Marks/Chatter ☐				Drill Holes ☐				Misaligned/off center ☐				Turning Sequence ☐			
Past Expiry Date ☐				Manufacturing Process ☐				OTHER : _____															
Misidentified ☐				Past Due ☐																			
Completed By												Lead hand / Supervisor Approval Verification											
QC / QA Coordinator Approval																							

Picklist Print

Monday, September 12, 2016 10:27:59 AM

Work Order ID: 150915

150915

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosscube Installation without Step (no hardware)

Start Date: 8/25/2016

Required Date: 9/21/2016

Start Qty: 1.00

Required Qty: 1.00

Comments:

IPP REV:A 14.09.03 NEW ISSUE DD VER:FJLM IPP
REV:B 14.10.15 AS PER REV:B DD VER:FJLM IPP REV:C
14.11.19 AS PER REV:C DD VER:FJLM IPP REV:D 14.12.12
AS PER REV:pd1 DD VER:FJLM IPP REV:E 15.02.11 AS PER
REV:FJLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D119-796-241TRN

Manufactured

No

Each

1.0000

**

1

D119-796-241TRN
Crosscube Turning Detail

B150152

**

1

16-10-14

D2873-043

Manufactured

No

Each

56.0000

**

4

D2873-043
Nut Plate Assembly

24-10-16

Location

146581

Loc Qty

Loc Code

56

**

4

16-10-25

16-10-25

16-10-25

16-10-25

16-10-25

16-10-25

16-10-25

D5122-1

Manufactured

No

Each

12.0000

**

1

D5122-1
Center Support, Upper

Location

146838

Loc Qty

Loc Code

**

1

16-10-25

16-10-25

16-10-25

16-10-25

16-10-25

16-10-25

16-10-25

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS							
Part No. _____		Rework Scrap Use-as-is Suspected Unapproved		Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other	
NCR No. _____		Step #: _____		QTY Effective : _____		MRB (QS1042) Approval					
		Date : _____		Description Work Order Deviation		Disposition		Completed By		Lead hand / Supervisor Approval Verification	
										QC / QA Coordinator Approval	
Root Cause		Pressure/Forced		Temperature/Cure		Power Loss/Surge		Positioned Wrong			
Environment	No Re-verification	Bending	Set-up	Broken/Damage/Defect	Folio/Program	Grain	Over/Under tolerance	Outside Dimensions			
Design	Operator	Centre Not Concentric	BOM/Route	Inspection Incomplete/Unqualified	Weld	Wrong Stock Pulled	Part Incorrect	Over/Under tolerance			
Doc/Data	Offset/Setup	Cracks	Contamination	Countersink	Wrong Stock Pulled	Out of Sequence	Part Lost/Missing	Part Moved			
Equip/Tooling	Supplier	Crimp/Kink/Ripple/Wave	Cut Too Short	Instructions Incomplete/Unclear	Off-set	Mislabeled	Drawing	Finish			
Handling/Pre	Training	Cuffs	Drill Holes		Fit/Function	Misaligned/off center	Misread	Turning Sequence			
Material	Use for Testing	Crushing									
Internal Transport	Poor Information	Heat Treat									
Tribal Knowledge	Rushing	Wave/Twist in Tube									
LOA	Product Improvement	Marks/Chatter									
Substation	Process Improvement										
Past Expiry Date	Manufacturing Process										
Misidentified	Past Due										
		OTHER :									

Picklist Print

Monday, September 12, 2016 10:27:59 AM

Work Order ID: 150915

150915

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT CrossTube Installation without Step (no hardware)

Start Date: 8/25/2016

Required Date: 9/21/2016

Start Qty: 1.00

Required Qty: 1.00

D5123-1

Manufactured No

Each

82.0000

6

D5123-1

Clamp Cushion

**

~~16-10-25~~

Location

Loc Qty

Loc Code

LG054

80

146761

6

149633

32

150113

12

prelim

36

115257

2

2

26.0000

2

~~16-10-25~~

D5123-5

Manufactured No

Each

D5123-5

Clamp Cushion

**

~~16-10-25~~

Location

Loc Qty

Loc Code

LG054

26

144625

2

150179

18

150179

8

7.0000

1

~~16-10-25~~

D5134-041

Manufactured No

Each

D5134-041

Damper Support Assembly, LH

**

~~16-10-25~~

Location

Loc Qty

Loc Code

LG054

7

146828

1

146828

7

6.0000

1

~~16-10-25~~

D5134-042

Manufactured No

Each

D5134-042

Damper Support Assembly, RH

**

~~16-10-25~~

Location

Loc Qty

Loc Code

LG054

6

146877

1

~~16-10-25~~

Monday, September 12, 2016 10:27:59 AM

Shop Packet Print

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____

Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐		AGAINST DEPARTMENT/PROCESS		MRB (QS1042) Approval ☐	
Date : _____ Step #: _____		QTY Effective : _____					
Description Work Order Deviation		Disposition					
				Completed By _____			
				Lead hand / Supervisor Approval Verification _____			
				QC / QA Coordinator Approval _____			

Root Cause		FAULT CATEGORY									
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/ Surge	☐	Positioned Wrong	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence	☐
Past Expiry Date	☐	Manufacturing Process	☐		☐		☐		☐		☐
Misidentified	☐	Past Due	☐		☐		☐		☐		☐
			OTHER : _____								

Picklist Print

Monday, September 12, 2016 10:27:59 AM

Work Order ID: 150915

150915

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 8/25/2016

Required Date: 9/21/2016

Start Qty: 1.00

Required Qty: 1.00

D5136-1 Manufactured No

Each 11.0000

1

D5136-1

Contact Pad, LH

Location

Loc Qty

Loc Code

LG055

146789

11

Each

12.0000

1

D5136-2 Manufactured No

D5136-2

Contact Pad, RH

Location

Loc Qty

Loc Code

LG055

146959

12

Each

0.0000

2

D5152-043 Manufactured No

D5152-043

Aft Post Mount Assembly

CR3212-4-07

Purchased No

Each

246.0000

16

CR3212-4-07

CHERRY RIVER

Location

Loc Qty

Loc Code

LG056

m133031

246

Each

27.0000

6

MS21920-25 Purchased No

MS21920-25

Clamp

Location

Loc Qty

Loc Code

RG

120920

m134987

2

Each

23

0

MS21920-25 Purchased No

120920

23

m135538

23

DQA:

Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date: _____

Work Order update only

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐		Engineering ☐ Quality ☐ Other ☐													
Date: _____		Step #: _____		QTY Effective: _____		MRB (QS1042) Approval																	
Description Work Order Deviation				Disposition				Completed By															
								Lead hand / Supervisor Approval Verification															
								QC / QA Coordinator Approval															
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐				No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐				Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐				Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐				Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
								OTHER: _____															

Picklist Print

Monday, September 12, 2016 10:27:59 AM

Work Order ID: 150915

150915

Parent Item: D119-796-241

D119-796-241

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 8/25/2016

Required Date: 9/21/2016

Start Qty: 1.00

Required Qty: 1.00

MS21920-28

Purchased No

Each

92.0000

2

MS21920-28

**

Clamp

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>	
FG	1		
105884	1		
LG050	75		
M135008	25		
M135009	50		
LG051	1		
M132169	1		
LG057	2		
M134130	2		
st543	13		
M135007	13		



DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

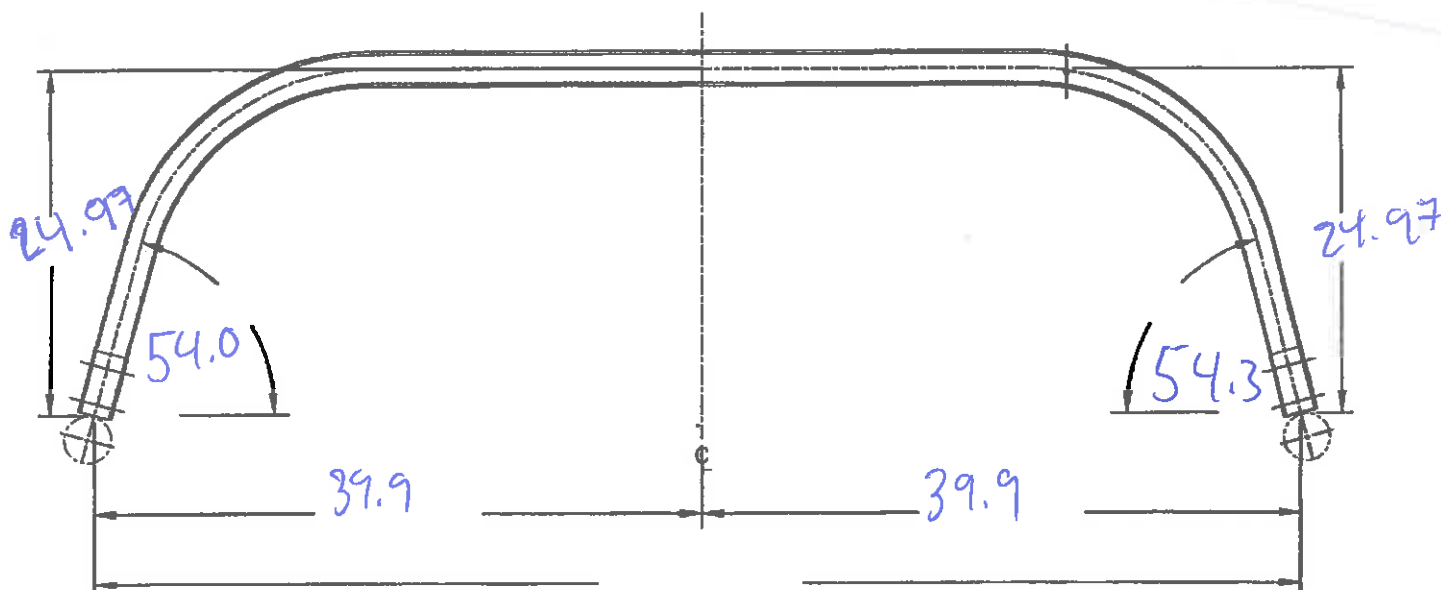
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION				AGAINST DEPARTMENT/PROCESS																					
Part No. _____		Rework Scrap Use-as-is Suspected Unapproved				Skid-tube Machining Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other															
NCR No. _____		Suspected Unapproved				Thermoforming Large Fab		Cross tube Small Fab Finishing Composite		Water Jet Prod. Eng. Coord. Rec/Store/Packaging Supplier		Engineering Quality Other															
Date: _____		Step #: _____				QTY Effective: _____		MRB (QSI042) Approval																			
Description Work Order Deviation																											
Disposition																											
Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval														Root Cause													
														Environment													
														Design													
														Doc/Data													
Equip/Tooling																											
Handling/Pre																											
Material																											
Internal Transport																											
Tribal Knowledge																											
LOA																											
Substation																											
Past Expiry Date																											
Misidentified																											
No Re-verification																											
Operator																											
Offset/Setup																											
Supplier																											
Training																											
Use for Testing																											
Poor Information																											
Rushing																											
Product Improvement																											
Process Improvement																											
Manufacturing Process																											
Past Due																											
OTHER: _____																											
FAULT CATEGORY																											
Pressure/Forced																											
Bending																											
Centre Not Concentric																											
Cracks																											
Crimp/Kink/Ripple/Wave																											
Cuffs																											
Crushing																											
Heat Treat																											
Wave/Twist in Tube																											
Marks/Chatter																											
Temperature/Cure																											
Set-up																											
BOM/Route																											
Broken/Damage/Defect																											
Inspection Incomplete/Unqualified																											
Contamination																											
Countersink																											
Cut Too Short																											
Instructions Incomplete/Unclear																											
Drill Holes																											
Power Loss/Surge																											
Folio/Program																											
Grain																											
Weld																											
Wrong Stock Pulled																											
Out of Sequence																											
Off-set																											
Mislabeled																											
Fit/Function																											
Misaligned/off center																											
Positioned Wrong																											
Outside Dimensions																											
Over/Under tolerance																											
Part Incorrect																											
Part Lost/Missing																											
Part Moved																											
Drawing																											
Finish																											
Misread																											
Turning Sequence																											

DART AEROSPACE LTD		Work Order:	150915
Description: Crosstube Aft, with Step		Part Number:	D119-796-241
Inspection Dwg: D119-796-241		Rev: I	Page 1 of 1

Required Dimension	Min	Max
Height	24.840	25.100
1/2 Span	39.810	40.070
Angle	54°	57°
Total Span	79.620	80.140
Bending Passes	8	--
Crushing	--	8.5%



	Side A	Side B
Bending Passes	11	13
Crushing	7.21	7.47
Comments		

QC15 Inspection	DAS 38
Date	OCT 17 2016

Rev	Date	Change	Revised by	Approved
A	15.04.14	New Issue	KJ	
B	15.11.12	Min angle revised	KJ	
C	15.12.15	Dwg Rev updated	KJ	

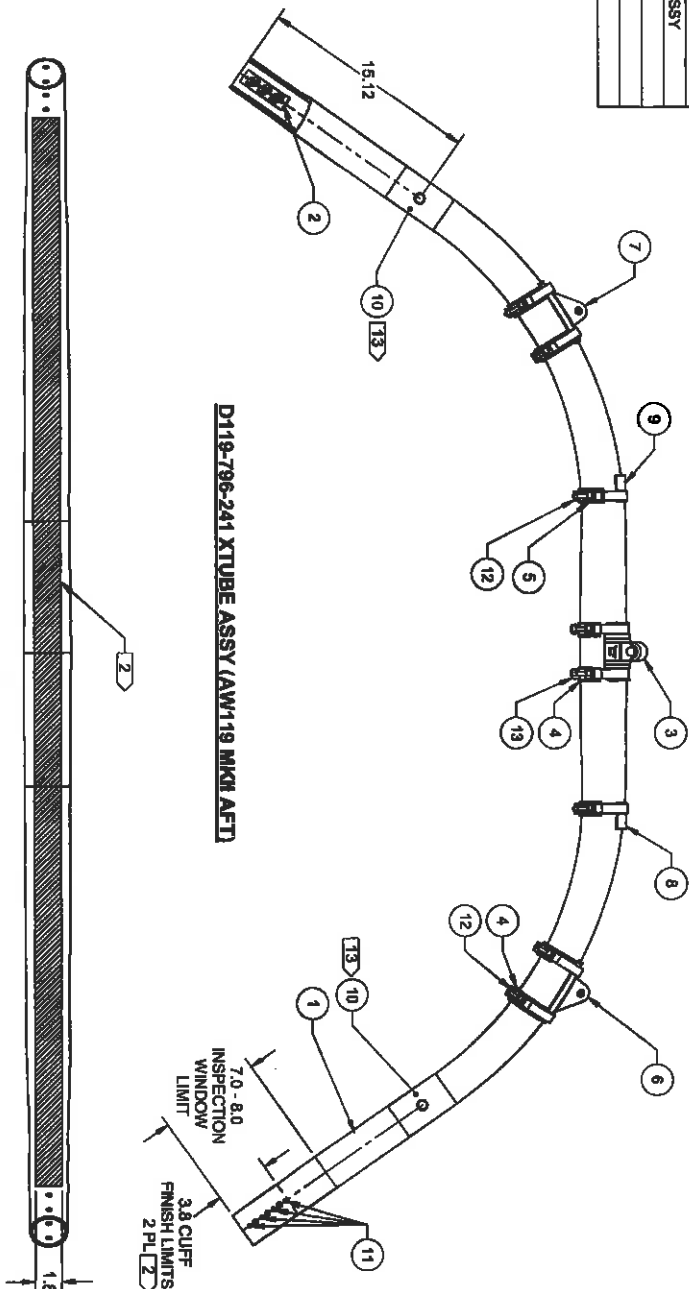
WORK ORDER NO. 150915 MCS
16-09-12

Diagram of a curved X-tube assembly, labeled 2-796-241 XTUBE ASSY (AW119 MKII AFT). The assembly consists of a long, curved tube with four clamps or connectors along its length.

- RELEASED
2015-11-04
E9415-642

[illegible]

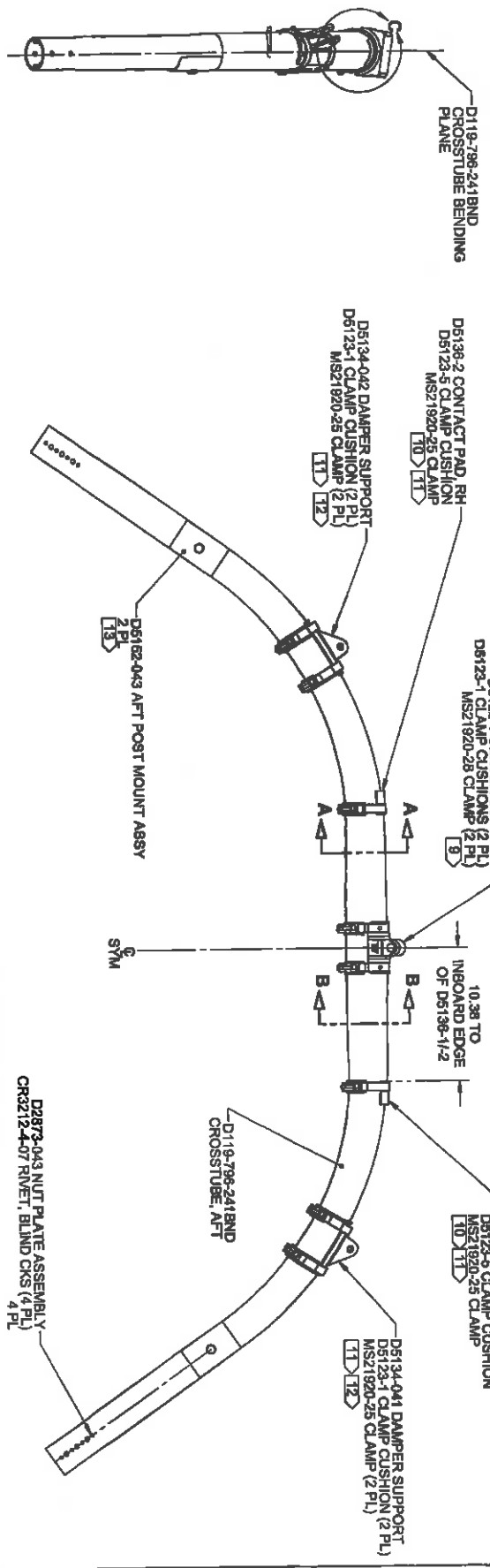
ITEM	QTY	PIN	DESCRIPTION
1	1	D119-796-241	XTUBE ASSY (AW119 MKII AFT)
2	4	D2873-043	CROSS TUBE, AFT
3	1	D6122-1	RADIUS BLOCK
4	8	D6123-1	CENTER SUPPORT
5	2	D6123-5	CLAMP CUSHION
6	1	D6134-041	DAMPER SUPPORT ASSY, LH
7	1	D6134-042	DAMPER SUPPORT ASSY, RH
8	1	D6136-1	CONTACT PAD, LH
9	1	D6136-2	CONTACT PAD, RH
10	2	CR3212-4-07	AFT POST MOUNT ASSY
11	16	MS21920-26	RIVET, BLIND CSK
12	8	MS21920-28	CLAMP
13	2	MS21920-28	CLAMP



DESIGN	AP	DART AEROSPACE LTD
DRAWN	AP	HARGREAVES, ONTARIO, CANADA
CHECKED	AS	DRAWING NO.
MFG. APPR.	JLM	D119-796-241
APPROVED	WMA	REV. 1
DATE	15.10.13	SHEET 2 OF 2
		SCALE
		TITLE
		XTUBE ASSY (AW119 MKII AFT) INTS
		COMPONENTS SHOWN BY DART AEROSPACE LTD
		NOT TO BE USED FOR ANY OTHER PURPOSES WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD

RELEASED
2015-11-04

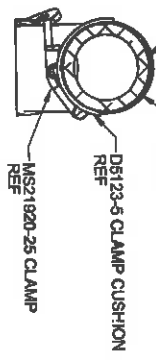
APPROVED



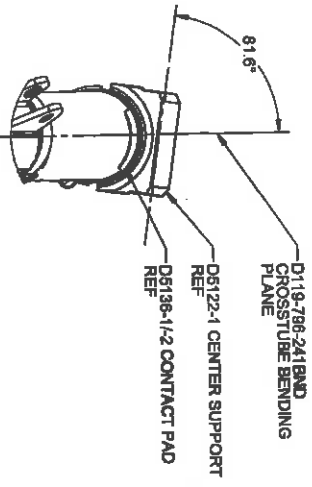
D119-796-241 XTUBE ASSY (AW119 MKII AFT)

APPLY PROSEAL 880 BETWEEN D5136-1/2 AND D119-796-241 BND CROSS-TUBE

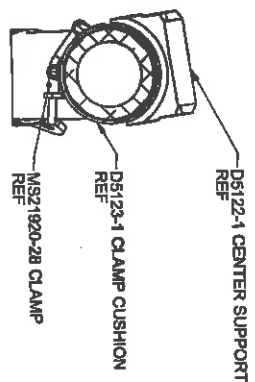
SECTION A-A SCALE 2X



DETAIL C SCALE 2X



SECTION B-B SCALE 2X

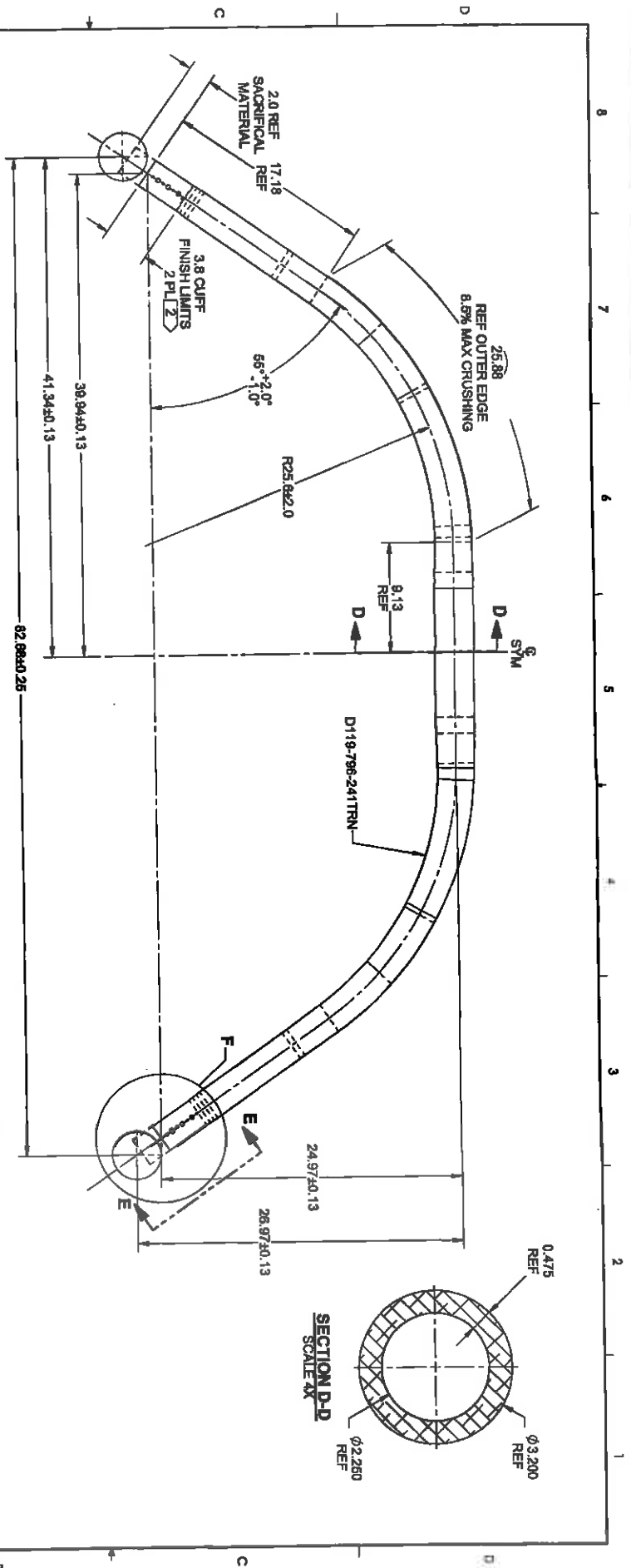


APPROVED

DESIGN	AP	AP	DART AEROSPACE LTD
DRAWN	AP	AP	HAWKESBURY, ONTARIO, CANADA
CHECKED	ASB	LM	D119-796-241
ING. APPR.	LM	WM	XTUBE ASSY (AW119 MKII AFT)
APPROVED	WM	WM	
DE APPR.	DS	DS	
DATE	15.10.13		

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RELEASED
2015-11-04

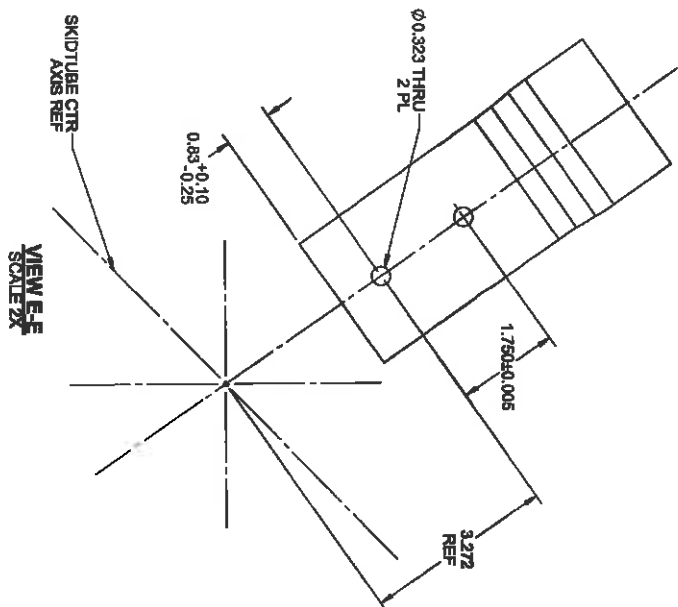


D119-796-241BND CROSS-TUBE ACT 9
BENDING AND DRILLING DETAIL

- NOTES:**
- 1) MATERIAL: MAKE FROM D119-796-241TRN
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART OSI 005 4.1
PRIME INSIDE AND OUTSIDE COAT PER DART OSI 005 4.2
DO NOT APPLY PRIMER TO CLIFFS IN LOCATION SHOWN. MASK PRIOR TO FINISHING
 - 3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 24.17 lbs
 - 8) PART IS SYMMETRICAL ABOUT CENTERLINE
 - 9) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8.5% BASED ON OD.
 - 10) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSS-TUBE PER OSI 038
 - 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

RELEASED
2015-11-04
APPROVED

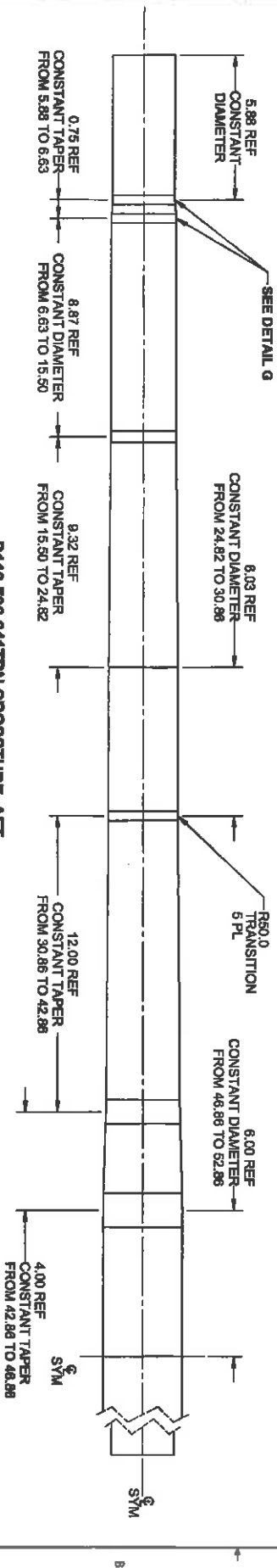
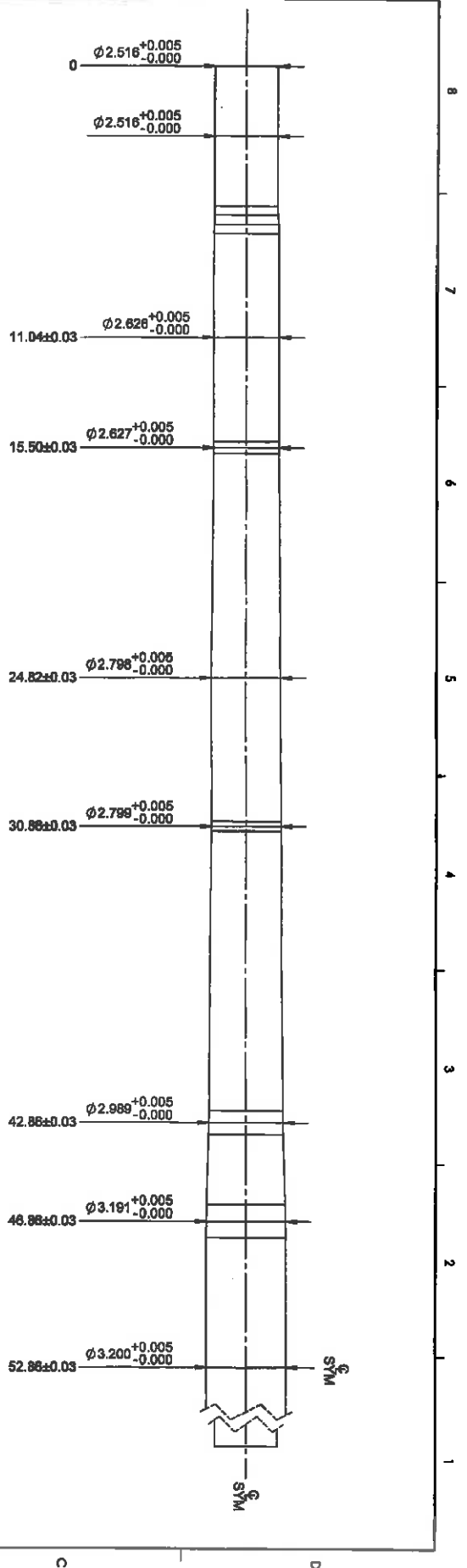
DESIGN	AP	DART AEROSPACE LTD
DRAWN	AP	HAWKESBURY, ONTARIO, CANADA
CHECKED	ALS	
MFG. APPR.	JLM	
APPROVED	WML	
DE APPR.	DS	
DATE	15.10.13	
TITLE		
XTUBE ASSY (AW119 MKII ACT)		
SCALE		
NTS		



RELEASED
2015-11-06

APPROVED

DAI AEROSPACE USA, INC. KENT, WA		REV. 1 SHEET 6 OF 6 SCALE:
DESIGN DRAWING CHECKED MFG. APPR. APPROVED DE. APPR. DATE	AP AP ALS JLM WML DB	DRAWING NO. 118-798-241 TITLE XTUBE ASSY (AW119 MKII AF7) PART NO.



D119-796-241TRN CROSS TUBE, AFT

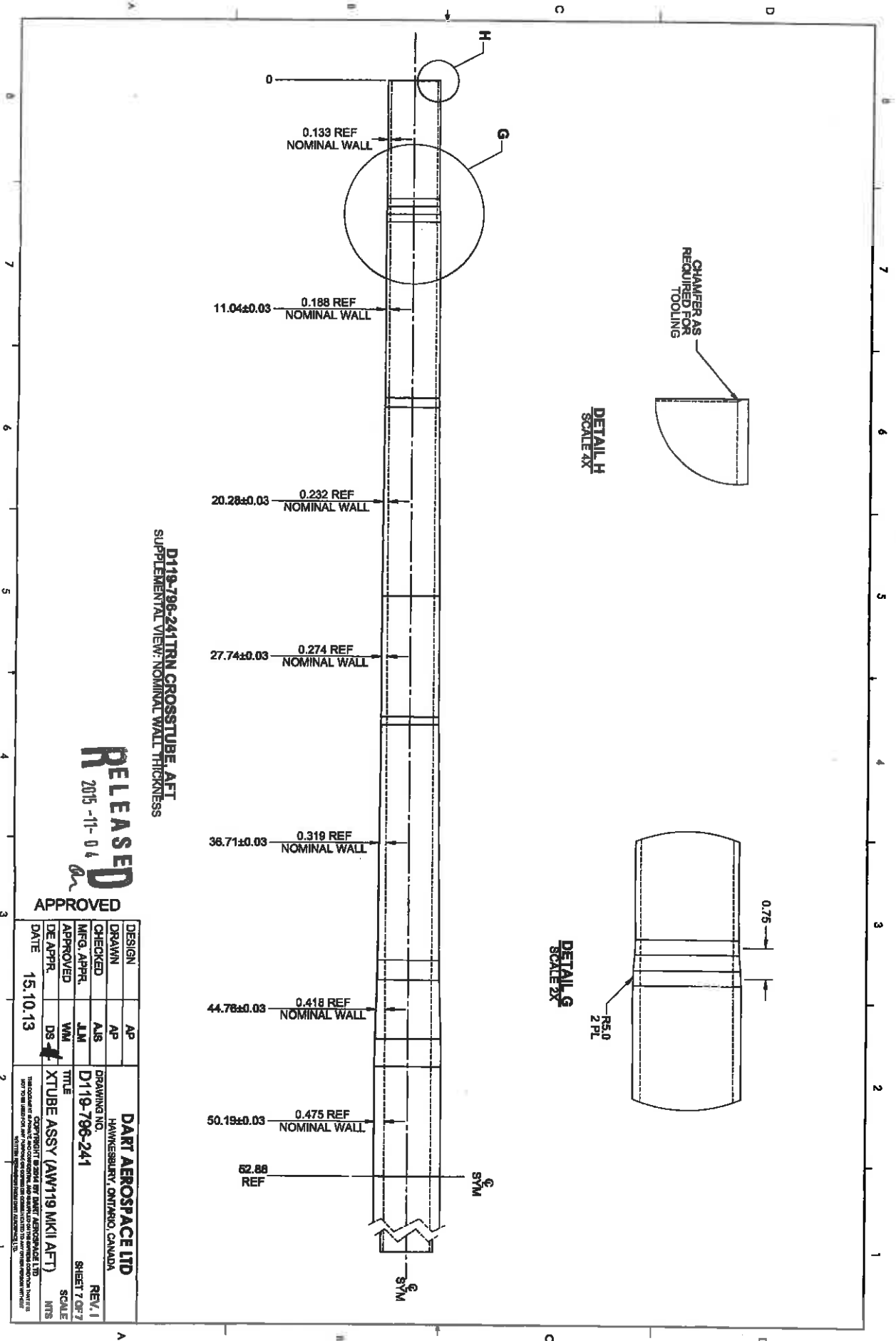
- NOTES:
- 1) MATERIAL: MANUFACTURE FROM D6023-106 (PREFERRED) OR D6009-106
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER PART 051 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 24.17 lbs
 - 8) PART IS SYMMETRICAL ABOUT CENTERLINE

RELEASED
2015-11-04

APPROVED

DESIGN	AP	DART AEROSPACE LTD
DRAWN	AP	HANESBURY, ONTARIO, CANADA
CHECKED	AJS	
MFG. APPR.	JLM	D119-796-241
APPROVED	WM	
DATE	15.10.13	
DE APPR.	DS	
TITLE	XTUBE ASSY (AW119 MKII AFT)	
SCALE	NTS	

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RELEASED
2015-11-04
APPROVED

D118-796-241 TRN CROSSTUBE AFT
SUPPLEMENTAL VIEW: NOMINAL WALL THICKNESS



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO34018

Purchase Order Date 10/21/2016

PO Print Date 10/21/2016

Page Number 2 of 3

Order From :
SKYSERVICE
6120 MIDFIELD ROAD
MISSISSAUGA, ONTARIO L5P 1B1
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 905-678-5636

Ship To Contact
Ship To Phone
Ship Via: Delivered
Ship Acct:

Buyer
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA - (Free Carrier)

Line Total: \$0.00

3 150978 D119-796-141 10/21/2016 1.00 \$0.00 \$0.00
CROSSTUBE

Yes
10/21/2016

OCT 21 2016

DAS
13
9-89

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$0.00

4 150915 D119-796-241 10/21/2016 1.00 \$0.00 \$0.00
CROSSTUBE

Yes
10/21/2016

OCT 21 2016

DAS
13
9-89

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Line Total: \$0.00

5 150914 D119-796-241 10/21/2016 1.00 \$0.00 \$0.00
CROSSTUBE

Yes
10/21/2016

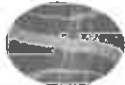
OCT 21 2016

DAS
13
9-89

LIQUID PENETRANT INSPECTION AS PER QSI 038 OR
LPI AS PER ASTM 1417 LEVEL 2

Note:

10/21/2016

 SkyService Work Order Traveler Sky Service F.B.O. Inc. DOT APP 53-89 / EASA 145.7142 / BDA AMO 385		WO #: MW029836 Customer: Dart Aerospace Ltd. Dept: NDT YUL Reference: PO34018	Descr: PN: S/N: Qty: 1	Make: Model: Reg: A/C S/N:	TSN: CSN: TSO:	Task: UNSCHEDULED Sequence: 1
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CARRY OUT NDT (LIQUID PENETRANT CRACK TEST) ON THE FOLLOWING FIVE (5) CROSSTUBES:

ID# D119-796-241 AFT CROSSTUBES

1- WORK ORDER ID 150598 2-WORK ORDER ID 150914 3- WORK ORDER ID 150915

OCT 2 1 2016

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13
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ID# D119-796-141 FWD CROSSTUBES

4- WORK ORDER ID 150977 5- WORK ORDER ID 150978

Action Taken:		LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-5) AS PER ASTM1417 M-13 NO CRACK FOUND PEN.(ZL-56, MPO13600), DEV.(SKD-S2, MPO11715), CLEANER(SKC-S, MPO13923) BLACK LIGHT USED: SER# M-20188			
Initial/Stamp:	Date:	2/001 20/6 DOT-APP 36 53-89			

Description	Location	P/N	Qty	Batch	S/N Off	S/N On

I certify that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:		
Name:	CHRISTIAN BRIEN	
Date:	2/001	20/6
ACA/SCA Stamp	DOT-APP 36 53-89	

